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**REPORT OF THE
FOURTH SESSION OF THE SUB-COMMISSION
ON AGRICULTURAL RESEARCH
OF THE EUROPEAN COMMISSION ON AGRICULTURE**



Held in Copenhagen, Denmark
23-27 September 1958

Food and Agriculture Organization of the United Nations



Beginning in January 1955, reports of FAO Meetings held as part of the Program of Work of the Agriculture Division, are being issued in the present form.

Reports are numbered chronologically within each calendar year.

The following reports of earlier meetings in this series have been issued:

Agricultural Development Paper No.29, "The Organization of Agricultural Research in Europe" held in London, England, 15-18 October 1951.

Report of the European Meeting on the Standardization of Information on Agricultural Research, held in Rome, 10-12 September 1952.

Report of the First Meeting of the Sub-Committee on Agricultural Research - European Committee on Agriculture, held in London, England, 22-25 November 1954.

Report of the Second Meeting of the Sub-Committee on Agricultural Research - European Committee on Agriculture, held in The Hague, The Netherlands, 22-25 August 1955.

Report of the Third Meeting of the Sub-Commission on Agricultural Research - European Commission on Agriculture, held in Paris, France, 8-12 April 1957.

REPORT OF THE FOURTH SESSION OF
THE SUB-COMMISSION ON AGRICULTURAL RESEARCH

European Commission on Agriculture

Held in
Copenhagen, Denmark
23-27 September 1958

Agriculture Division

Food and Agriculture Organization of the United Nations
October 1958 Rome, Italy

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INTRODUCTION

The Fourth Session of the Sub-Commission on Agricultural Research was held in Christiansborg Castle in Copenhagen, Denmark, 23-27 September 1958. The session was opened by the Chairman, Mr. A.W. van de Plassche of the Netherlands. Mr. van de Plassche introduced the Minister of Agriculture of Denmark, Mr. Karl Skytte, who welcomed the delegates to Copenhagen. Minister Skytte wished the delegates a successful meeting and hoped that they would acquaint themselves with Danish research and experimental activities. He stressed the fact that European agriculture had developed at a tremendous pace in post-war years and that agriculture must continue to progress to maintain its position relative to other sectors of the economy. Agricultural research must also advance and its findings be brought to the farmer. He concluded his opening remarks by referring to the Sub-Commission as the instrument through which countries could best coordinate their agricultural research and hoped that effective use would be made of that instrument.

In the name of the Director-General of FAO, Mr. Bruce thanked the Government of Denmark and the Minister of Agriculture for inviting the Sub-Commission to Copenhagen with excellent facilities in the imposing Castle of Christiansborg. He also praised the spirit of collaboration shown by the Danish National FAO Committee for its help in organising the session.

Attention was drawn by Mr. Bruce to the governmental boards, committees, commissions etc. which have been established in various countries to promote improved coordination of research. Mr. Bruce suggested that in placing too much reliance on the establishment of these governmental bodies, opportunities for coordination of research through greater support for non-governmental and semi-governmental bodies may be overlooked. He referred to the national and international professional associations which are close to practical problems, and may be able to take the lead in coordinating specific research activities.

This view, he said, was expressed with particular regard to the Sub-Commission's future program of work, bearing in mind the point raised in the new terms of reference "making the best use of resources available" and the concern of ECA with development of a balanced program of work adapted to the realities of national and international problems. He suggested that the possibilities should be explored of enlisting the aid of professional associations in promoting coordination of research.

He also suggested that the work of the FAO Secretariat be restricted to organisational rather than technical aspects of the cooperative research projects. In this way it might be possible for the number of cooperative research projects to be enlarged without difficulty. These measures would be in accord with the Sub-Commission's primary aim, namely, to "promote and facilitate cooperation in agricultural research" by all possible means.

In closing, Mr. Bruce warmly thanked Mr. van de Plassche for his devotion to the success of the Sub-Commission and for his readiness to collaborate with the FAO Secretariat in spite of the heavy responsibility he carried in Holland as Director-General of Agriculture.

Professor Bondorff, speaking for the Danish delegation, and on behalf of agricultural workers in Denmark, expressed his pleasure in having the Sub-Commission on Agricultural Research meet in Denmark. He went on to say that it is very difficult for a small country like Denmark to provide research workers with all the facilities they require even if the government fully realizes the need. Therefore Danish research workers understand the benefits which will accrue from cooperation and coordination of agricultural research. And, in conclusion, speaking for his Danish colleagues, Professor Bondorff warmly welcomed the delegates to Denmark, and expressed the hope that in spite of the heavy agenda, delegates would be able to look back with pleasure on their stay in Copenhagen.

The Chairman, Mr. van de Plassche, then extended a hearty welcome to the delegates to the fourth session of the Sub-Commission. He said he hoped that the Sub-Commission would be able to advance yet another step in the direction of the ultimate goal and that the result of the discussions would be the development of a satisfactory program of work for the future. He then thanked the Danish delegation for the preparations which had been made and said he was sure they would prove to be the perfect hosts and that none would regret the long trip north.

Mr. van de Plassche emphasized the importance of the meeting in not only discussing the items of the agenda but also in the promotion of mutual contacts and friendship between the delegates. He hoped the meeting would be a success in both respects. He then asked the delegates for their usual full cooperation in order to properly preside over the discussions. He welcomed Mr. Peebles, the Technical Secretary, back from a year of study in the United States. Mr. van de Plassche expressed a special word of thanks to Mr. Bruce and to Mr. Packman of FAO for their care in preparing for the meeting in the absence of the Technical Secretary.

Early in its deliberation the Sub-Commission decided to establish a small working party to deal with two items of the agenda. These items included consideration of a paper on organization and working methods of the subsidiary bodies of the European Commission on Agriculture, and appraisal of possibilities for effective cooperative action relative to agricultural research in Europe. It was felt by the Sub-Commission that as both of these items touched on the future program of work, a working party would best be able to give them careful and detailed consideration. The Working Party was established composed of the delegates from Denmark, Spain, Sweden, Netherlands and the United Kingdom. Professor Bondorff, the delegate of Denmark, was elected Chairman.

The Sub-Commission unanimously re-elected Rodrigo de Castro of Portugal as Vice-Chairman.

Before closing the meeting, Mr. van de Plassche, reminded the delegates Mr. Anderson, the Chairman of the Sub-Commission on Extension and Vocational Training in Agriculture, Home Economics and Rural Youth was present. He said he was happy Mr. Anderson was present to emphasize the close relationship which exists between the two Sub-Commissions of the European Commission on Agriculture.

Mr. Anderson, speaking as Chairman of the Sub-Commission on Extension and Vocational Training in Agriculture, Home Economics and Rural Youth, said he was delighted to be present at the closing meetings of this session. He urged closer cooperation between the two Sub-Commissions since they dealt with closely related problems and hoped that sometime in the near future the Sub-Commissions might have a joint meeting for one day.

The delegate from Poland, present for the first time, said he was happy his country could be present in the Sub-Commission. He stressed that the problems of Poland are similar in many respects to those of other countries in Europe and therefore widened international contacts will be welcome.

In his closing remarks the Chairman thanked the delegates for their cooperation in making his task a pleasant one. He also thanked the staff who had worked hard to make the meeting a success. He especially thanked Mr. Bruce for his contribution to the meeting.

In his closing remarks Mr. Bruce expressed the hope that full discussions would take place in member countries between the delegates and research directors so that it would be possible at the next session to put into practice the principles discussed at the Fourth Session. In this regard, he was particularly hopeful that some definite proposals would be put forward at the next session to take advantage of the role other international research groups and professional associations can play in promoting improved coordination of research activities.

The Chairman, Mr. van de Plassche, then adjourned the Fourth Session of the Sub-Commission on Agricultural Research.

PARTICIPATION IN THE SESSION

Delegates, Members of the Delegations and Observers from Member Countries

Austria

A. Zeller, Director, Federal Experimental Station on Agricultural Chemistry, Vienna

Denmark

Delegates

K.A. Bondorff, Professor, The State Laboratory of Plant Culture, Lyngby

Fr. Heick, Director, The State Experimental Station, Store Jyndevad

S. Tovborg Jensen, Professor, The Royal Veterinary and Agricultural College, Copenhagen

Victor Middelboe, Assistant Director, The Royal Veterinary and Agricultural College, Isotope Laboratory, Copenhagen

K. Skovgaard, Professor, The Royal Veterinary and Agricultural College, Copenhagen

F. Steenbjerg, Professor, The Royal Veterinary and Agricultural College, Copenhagen

Observers

Poul Erner Andersen, Civil Engineer, Government Home Economics Council, Copenhagen

H.C. Aslyng, Professor, The Royal Veterinary and Agricultural College, Copenhagen

Else Boken, Secretary, The Royal Veterinary and Agricultural College, Copenhagen

Ernst Gram, Director, Experimental Station on Plant Pathology, Lyngby

A. Dambofoed, Director, The State Experimental Station, Askov

J.M. Lyshede, Professor, The Royal Veterinary and Agricultural College, Copenhagen

Jens Sandfaer, Assistant Director, the Atomic Energy Commission, Risø, Roskilde

Finland

Pellervo Saarinen, Director General, Agricultural Research Center,
Erottajank 15-17, Helsinki

France

J. Ferru, Director, National Institute of Agricultural Research, Paris

Germany

P.E. Hornung, Chief of Agricultural Research Section, Ministry of
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Th. Petrovas, Director, Research Division, Ministry of Agriculture,
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Ireland

John Beatty, Chief Inspector, Department of Agriculture, Dublin

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Italy

Ugo de Cillis, Director, National Institute for Cereal Genetics
"Nazareno Strampelli", Rome

Netherlands

A.W. van de Plassche (Chairman), Director General of Agriculture,
Ministry of Agriculture, Food and Fisheries, The Hague

G. de Bakker, Deputy Director for Horticulture, Ministry of Agriculture,
Food and Fisheries, The Hague

G. Wansink, Secretary, National Council for Agricultural Research,
The Hague

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Ole Mjelde, Assistant Director, Agricultural Research Council of Norway,
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Poland

Josef Witold Goralski, Milanovek, Warszawa

Listowski, Professor, Warszawa

Portugal

L. Costa-Rodrigues, Agricultural Engineer, Portuguese National FAO Committee, Lisbon

Spain

G. Bornás, Vice-President I, National Institute for Agricultural Research, Madrid

Sweden

G.R. Ytterborn, Deputy Director General, Kgl. Lantbruksstyrelsen, Stockholm

Switzerland

A.J. Kauter, Assistant Director, Division of Agriculture, Bern

United Kingdom

E.E. Cheesman, Scientific Assistant to the Secretary, Agricultural Research Council, London

John H. Anderson, Regional Director of Extension, Ministry of Agriculture, Cambridge, and Chairman of the Sub-Commission on Extension and Vocational Training in Agriculture, Home Economics and Rural Youth

Yugoslavia

Slavko Borojević, University Professor, Faculty of Agriculture, Novi Sad, Yugoslavia

Observers from Organizations

Organization for European Economic Cooperation (OEEC)

C.C. Thomsen, Consultant, Organization for European Economic Cooperation, European Productivity Agency, 2 Rue André Pascal, Paris

European and Mediterranean Plant Protection Organization

L.W.D. Caudri, Technical Director, E.P.P.O., Paris

International Seed Testing Association

H.C. Baekgaard, Assistant Director, Copenhagen

Commission Internationale des Industries Agricoles et Alimentaires

G. Bornás, President, Paris

Office International des Epizooties

F. Wøldike Nielsen, Veterinary Director, Copenhagen

Federation Européenne de Zootechnie

Johs. Jespersen, Professor, 7 via dei Sabini, Rome

FAO Staff

Victor W. Bruce, Agricultural Officer, Agricultural Institutions and Services Branch, Agriculture Division

Truman F. Peebles, Agricultural Officer, Agricultural Institutions and Services Branch, Agriculture Division

Officers of the Meeting

A.W. van de Plassche, Netherlands, Chairman of the Meeting

Truman F. Peebles of the Agriculture Division of FAO, Technical Secretary.

REPORT BY THE CHAIRMAN ON THE 9th AND 10th SESSIONS
OF THE EUROPEAN COMMISSION ON AGRICULTURE

Mr. van de Plassche reported on the 9th and 10th Sessions of the European Commission on Agriculture which were held in June 1957 and May 1958 respectively. During this period the Sub-Commission on Agricultural Research did not meet.

Mr. van de Plassche stated that his report to the ECA as Chairman of the Sub-Commission was followed by an important discussion. He told the ECA that during this period the program of work and policy concerning the coordination of agricultural research remained unchanged.

In both meetings of the Commission he stated that special attention had been given to the importance of close cooperation between the Sub-Commission on Agricultural Research, Member Countries and the FAO Secretariat. He emphasized the increasing need for central servicing with the growth of work of the Sub-Commission, the importance of maintaining current information on agricultural research (for example the Index of Agricultural Research Institutions) and the vital role that the FAO Secretariat would necessarily have to play in collecting information and making it available to the Sub-Commission.

In both meetings of the European Commission on Agriculture he had mentioned the progress of work under way and the future policy suggested at the 3rd meeting of the Sub-Commission. At the 10th Session of ECA he had expressed the hope that the Sub-Commission would be able to do more in the future, in view of the growing need for more agricultural research. He told the ECA that the Sub-Commission is in a position to play an important role in future development by stimulating closer contact between the institutes and between the research workers.

Mr. van de Plassche reported to the ECA that although progress has been made, the results obtained at present by the Sub-Commission are not fully satisfactory.

After his statement the Ninth Session of the European Commission on Agriculture discussed activities of the Sub-Commission. Delegates expressed their appreciation for the progress being made and fully agreed with Mr. van de Plassche's statement concerning the need for intensified cooperation.

The Ninth Session of the ECA agreed the terms of reference of the Sub-Commission on Agricultural Research should be reviewed in the light of the experience gained since its establishment. As a consequence the 10th Session approved the following new terms of reference:

"The Sub-Commission on Agricultural Research should promote and facilitate cooperation in agricultural research between member countries of the Commission, taking into account economic and social aspects of the problems encountered with the aim of making the best use of resources available".

To facilitate the work of the Sub-Commission within these new terms of reference, ECA expressed the desire that delegates to the Fourth Session of the Sub-Commission should be prepared to present a limited number of realistic projects, which their Governments wish to be considered by the Sub-Commission for inclusion in its program of work. Priorities could then be established and presented to the next session of the Commission for approval.

In determining priorities, Mr. van de Plassche reported, it was agreed that attention should be given to short-term projects as well as those requiring continuing attention over a number of years, and that existing projects should be considered along with the new proposals when priorities are being established.

The ECA expressed the hope that the Copenhagen meeting in September 1958 may prove to be a turning point in the activities of the Sub-Commission based upon four years of experience in determining what can be done.

At the 9th ECA Session Dr. Wahlen, who was then Director of the Agriculture Division and who is now the Deputy Director-General of FAO, stated in connection with the Sub-Commission's statement of policy that this was a very useful document and he had full sympathy with the objectives set out therein. However, in connection with the wish expressed by the Sub-Commission regarding services to be provided by the Secretariat, he felt bound to point out the difficulties and limitations imposed by budgetary and staff considerations. He noted, for example, that the compilation of the Index of Agricultural Research Institutions in Europe had been a very heavy task, and he had to express reservations regarding the possibility of keeping it under revision and also the preparation and publication of other similar indices. Dr. Wahlen emphasized that the activities of the Agriculture Division in Europe are more intensive than is usually realized, and it must be kept in mind that occasionally it is necessary to terminate certain projects in order to make room for more urgent ones.

Mr. van de Plassche said the delegate of the Federal Republic of Germany emphasized the need for FAO to consider matters relating to radioactive contamination on the farm which might result from increased use of atomic energy. In this connection it had been reported that FAO was maintaining a close working relationship with the scientific committee on the effect of atomic radiation established by the General Assembly of the United Nations which would submit its report to the session of 1958.

At the 10th Session of the ECA the delegate of the Netherlands introduced a further note concerning radioactive contamination on the farm and informed the Commission about work in this field which has been carried out in his country. Most of the delegates participated in the discussion and gave information concerning experience in their countries. During the discussion the delegate of the United Kingdom described the considerable amount of research that has already been conducted in his country on the basic principle involved. He mentioned the recent incident at the Windscale Atomic Energy Establishment. It has been most rewarding to find that theoretical speculation has been borne out in practice. Dr. Silow also informed the ECA regarding FAO cooperation with other organizations in the field of atomic energy.

The Chairman reported that the 10th Session of ECA had agreed on the following:

The Commission

considering the need for more intensive investigations and collection of information on the possible effects of radio-contamination on food supplies and agricultural production,

recognizing the desirability of taking early steps to arrange that agricultural advisory services be in a position to disseminate such information to farmers where needed,

recommends that governments give high priority to

- (i) the progress of research on the food and agricultural aspect of environmental radiocontamination;
- (ii) the training of staff of the agricultural advisory services on measures that can be taken by the farmers to safeguard food producing resources, livestock and food supplies from radiocontamination;

considering further that such action by governments can be greatly facilitated by international cooperation,

requests that the Director-General

- (i) organize an international training course on protective measures against radiocontamination on the farm for senior advisory officers of Member Governments;
- (ii) refer this matter for consideration and action on an international basis with a high degree of priority to such international bodies as he may deem most appropriate or expeditious;
- (iii) make arrangements as feasible for the distribution to Member Governments of information and documentation on the results of research and extension aspects of environmental radiocontamination in so far as food and agriculture are concerned.

On behalf of the Director-General, it was announced that in respect of the importance of these matters every effort would be made to organize the proposed training course on a European level at the earliest opportunity, possibly in March or April 1959. This initial training course might, at the requests of governments, be followed at intervals by others of similar nature and scope and possibly with wider geographic participation.

Between the Ninth and Tenth Sessions of ECA there was a meeting of the Executive Committee in February 1958 at Paris. The meeting was attended by the Chairmen of the Sub-Commissions. The members of the Executive Committee and the Chairman of the Sub-Commission on Agricultural Research discussed the implications of the new terms of reference.

At the Fourth Meeting of International Organizations held from 3 to 8 February 1958 at Paris, and organized by FAO, Mr. van de Plassche said he was asked, as Chairman of the Sub-Commission on Agricultural Research, to comment on a working paper concerning collaboration between international organizations on international cooperative research projects. The other activities of the Sub-Commission were also reviewed at this meeting.

Mr. van de Plassche said he went on to report to the meeting of international organizations that the Sub-Commission stressed the need for international cooperation in agricultural research and invited the organizations present to suggest means whereby this cooperation might be achieved. During the discussion it was emphasized that the new organization of Europe which is now being implemented, presents problems of coordination, some of which are of an urgent nature. It is therefore necessary to make every effort to increase contacts and cooperation between the specialists engaged in scientific research in order to improve the efficiency of their work as much as possible.

Mr. van de Plassche said he stressed that coordination in scientific matters is not possible without direct contact between research workers. This very desirable cooperation can be assured in part by annual meetings of research workers on strictly limited subjects. It would also be convenient, he told the meeting of International Organizations, to increase the interchange of young research workers by means of the allocation of fellowships which would enable them to learn new techniques. At the same time the standardization of research techniques necessitates the employment of analytical methods strictly identical both in their principles and in their details of execution.

The extraordinary increase of scientific publications of interest to agriculture make bibliographical work more and more complicated. Thus, it is most desirable that all publications on original work should include a summary in English, German and French.

The Fourth Meeting of International Organizations concluded, the Chairman said, that, although the European Liaison Center of FAO in Rome had received much useful information, the Sub-Commission's purposes would be better served if additional data on matters such as specific research projects currently under way, the number of countries participating, the extent of government support, etc., could be provided. The meeting considered that it would be advisable for the Liaison Center to send out a questionnaire so as to collect this information.

It was recommended that:

International Organizations should inform the Liaison Center concerning:

- (i) their research activities under way;
- (ii) their intention to cooperate with the Sub-Commission on Agricultural Research of the European Commission on Agriculture;
- (iii) their interest in a questionnaire on research activities..

SUMMARY OF DISCUSSIONS

Contact Group on the Uses of Radioactive Isotopes and Radiation in Agricultural Research

The Sub-Commission heard a report on the work of the Contact Group on the Use of Radioactive Isotopes and Radiation in Agricultural Research. It was pleased to note that members of the Contact Group had participated in the OEEC meeting on Atomic Science in Agriculture and Food which was held in Paris in July, 1958. At the end of this meeting a short informal meeting of the group took place to discuss FAO plans for future activity of interest to Europe.

There will be a European Meeting on the Use of Ionising Radiations for Food Preservation organized in the United Kingdom during November 1958, in response to a recommendation of the Contact Group at its first meeting, that consideration should be given to means of organizing international cooperation in research on food irradiation in Europe. As a result of discussions at the 10th Session of the European Commission on Agriculture held in Rome, May 1958, it is hoped to organize in 1959 a European Symposium on the training of agricultural advisory services officers on agricultural aspects of environmental radioactive contamination.

The Sub-Commission was pleased to learn that recommendations were made during the OEEC meeting that the next meeting on Atomic Energy in Food and Agriculture, which it is hoped to hold during the next two years, be organized on a more specialized subject matter basis. This proposal had been strongly supported by the Contact Group and was endorsed by the Sub-Commission on Agricultural Research.

The Sub-Commission learned that in mid-1959 FAO will organize an international training course on radioisotope techniques in agricultural research. This course will last for eight weeks. It also learned that there is a WHO/FAO-export committee on radio-chemical methods of analysis of special interest to health and agricultural laboratories. This expert committee is now being convened in Geneva.

There was a discussion of the need to consider radioactive contamination on the farm. The Sub-Commission emphasized the importance of the subject and agreed that this suggestion should be referred to the Contact Group for consideration at its next meeting.

The Sub-Commission reaffirmed its position that it had established the Contact Group for the specific purpose of considering all matters connected with the use of atomic energy in agricultural research and that problems of research on specialized subject matter in atomic energy touching on agriculture should first be considered by the Contact Group. Following consideration by this group a recommendation might be made for further action.

The Sub-Commission concluded its discussions on this matter by expressing its pleasure at the work accomplished thus far by the Contact Group. It agreed that the work was progressing satisfactorily.

Cooperative Research Project on Trace Elements

The Sub-Commission heard a report of the progress which had been made on the Cooperative Research Project on Trace Elements. It was very pleased to learn of the excellent work which had been done by Professor T. Wallace of Long Ashton Research Station in summarizing the response to the questionnaire which had been sent out by FAO. The response to the questionnaire was reported to have been excellent and all members of the Contact Group provided detailed replies.

It was stated that it had not proved possible to convene a meeting of members of the Cooperative Research Project on Trace Elements to consider Professor Wallace's summary of the replies to the questionnaire prior to the Fourth Session of the Sub-Commission. The Sub-Commission urged that such a meeting be held at the end of 1958 or early in 1959.

The Sub-Commission took note of the fact that Professor Wallace would be unable to continue as coordinator of the research project. It regretted this very much in view of the fine work which he has done. It requested that Professor Wallace be asked to serve as coordinator until a meeting of specialists can be called to review the replies to the questionnaire. At that time the members of the Cooperative Research Project on Trace Elements can decide on a successor to Professor Wallace.

The Sub-Commission concluded its discussion on this item by expressing its pleasure at the progress which has been made thus far and extended a vote of thanks to Professor Wallace for his contribution. The Sub-Commission agreed that the material which Professor Wallace has prepared should be reproduced and sent to members of the research project at an early date.

Cooperative Research Project on Supplemental Irrigation

The Sub-Commission considered a report on the progress of work of the Cooperative Research Project on Supplemental Irrigation. It recalled that Professor Brouwer of Germany, had been designated as the coordinator of this group and Professor Luis Cavanillas vice-coordinator. Professor Brouwer was to serve for the central and northern European countries and Professor Luis Cavanillas, Spain, for the southern and Mediterranean countries. It learned that Professor Brouwer had called the meeting of the northern group which was held at Stuttgart Hohenheim, on 14-15 November, 1957. Four countries were present at that meeting (Austria, Denmark, Germany and The Netherlands). Resulting from these discussions, future cooperative action is envisaged in the following fields:

1. Exchange of publications and of results of research work;
2. Definition of technical terms in the various languages used in the countries participating in the Project;

3. Planning and conducting field trials to determine optimum time of irrigation in relation to (a) plant requirements, (b) soil moisture content, and (c) a combination of (a) and (b).

A second meeting of representatives of the Northern Group of countries was held on the occasion of a Conference on Supplemental Irrigation sponsored by the International Society of Soil Science, held in Copenhagen from 30 June to 4 July 1958. Representatives from Denmark, Germany, The Netherlands were in attendance and concluded that possibilities for international cooperation in regard to active research projects are definitely limited and that such cooperation can best be effected through an exchange of information on recently concluded and current research on various phases of irrigation.

The Sub-Commission was informed that the southern group had not met. The delegate from Spain stated that Professor Luis Cavanillas, the vice-coordinator of the southern group was planning a meeting in Madrid, Spain, some time during November 1958. Professor Brouwer will be invited to this meeting and it is expected that during the meeting the southern group will establish a definite pattern of working methods.

The Sub-Commission concluded its discussion on this item by agreeing that it was somewhat too early to measure the effectiveness of the Cooperative Research Project on Supplemental Irrigation. In spite of this, it was pleased to learn that the northern group had already obtained interesting results by the establishment of uniform experiments in several countries.

Ad Hoc Working Party on Olive Growing and Olive Oil Production

The Sub-Commission was informed that a questionnaire prepared in the FAO Secretariat in collaboration with members of the working group, and approved by the various commissions of the First International Conference on Olive Technicians which was held in Tangiers during May, 1958, had been distributed during August to the 30 olive growing countries of the world. It was hoped to obtain replies to this questionnaire by November, 1958.

The Sub-Commission concluded a brief discussion of this item by expressing its satisfaction with the development of work thus far. It expressed its thanks for the work done by the late Professor Marinucci and by Professor Jacoboni, both of whom had been helpful in preparing the questionnaire.

Index of Agricultural Research Institutions in Europe

The Sub-Commission heard a brief report concerning the distribution of the revised version of the Index of Agricultural Research Institutions in Europe. This document has been sent out from FAO in Rome in sufficient quantities to permit distribution to all research institutions listed in the index. Copies were also sent to various organizations and interested bodies, and a total of approximately 1500 copies has been distributed. The Sub-Commission expressed satisfaction with the Index and agreed that it serves

a very useful purpose in member countries. The Sub-Commission commended the FAO Secretariat and Dr. de Bakker of The Netherlands for their excellent work on the Index.

Consideration was given by the Sub-Commission to the notion of preparing the Index in a looseleaf system. Thus it would be possible for countries to submit information to FAO according to the standard-form adopted in the Index, and FAO could duplicate this information and send it in bulk to member countries. The Sub-Commission concluded its discussion with the suggestion that FAO study the possibilities of revising the Index according to a looseleaf or some other system which would facilitate revision and suggested that supplemental information for the Index should include data such as officers, addresses and similar material concerning the national coordinating bodies of each country. It hopes that a definite proposal might be put forward at the next session of the Sub-Commission.

List of Agricultural Research Indices

The Sub-Commission had before it the report concerning the progress which has been made in the preparation of national indices of agricultural research projects. It was pleased to note that at the present time seven countries had prepared agricultural research indices of one form or another. They are:

Belgium	Spain
Germany	The Netherlands
Italy	United Kingdom
Portugal	

In the discussion which followed it became clear that translation of these indices presents a formidable problem. Some countries have prepared indices for many years but have not found it possible to translate them into one of the official languages of FAO. It is apparently necessary to work out some relatively simple system whereby research projects might be identified independently of the language of the country which prepared the index. If research projects were thus numbered according to a common system the exchange of research indices between member countries, even though published in the original language, would take on considerably more meaning. The Sub-Commission therefore concluded that the best procedure would be for the FAO Secretariat to develop a workable system of numbering research projects using the Universal Decimal System and present a definite proposal to the Sub-Commission for consideration.

Interchange of Research Workers

The Sub-Commission had a full discussion of the paper which had been presented on this subject. It was pointed out by several delegations that the figures which appeared in the documents were in some cases misleading when read out of context of the questionnaire sent out by FAO. This difficulty was especially apparent when applied to brief visits of scientists.

There was interest and agreement on the value of the compilation expressed by the Sub-Commission, but some doubt was expressed regarding the need for a yearly compilation. It was suggested by several delegates that perhaps it would be sufficient if a full report was prepared every three or four years.

During the discussion agreement was reached that financing was one of the stumbling blocks to increasing the movement of research workers between countries. It was pointed out by several delegations that the use of the word "exchange" was in fact a misnomer. In many cases exchange of research workers was not involved, but it was rather a matter of sending a research worker from one country to another without any counterpart returning to the research worker's home country.

The Sub-Commission agreed that collection of figures does not in itself promote the exchange of research workers, and that it was the task of the Sub-Commission to make definite recommendations which would in fact promote real interchange. It was suggested for example that it would be desirable to extend and expand agreements of the type formerly in force between France and the United Kingdom. It was further suggested that it would be desirable to tie the exchange of agricultural research workers to cultural exchange arrangements already in force between member governments of Europe.

Some countries experienced difficulty in determining where to send research workers. It was suggested that in many cases there was no information on this subject available to research administrators. The Sub-Commission concluded the discussion on this point by deciding that it would be extremely difficult if not impossible to set up complete lists of research stations which could receive research workers from other countries. However, it was agreed that the liaison officers in the countries should have information available.

The Sub-Commission had before it the letter which had been received by Dr. Wahlen from Mr. Symonds, the Technical Assistance Board Representative in Yugoslavia. Mr. Symonds showed considerable interest in this item and suggested that the arrangements in force under the UNTAA in the social welfare field in Europe might very well be explored by FAO with the object of determining whether these arrangements might be applicable to agricultural research workers. In the discussion which followed several delegations pointed out the value of finding a method whereby research workers from soft currency countries, like Yugoslavia, might receive some assistance. The Sub-Commission agreed that there were countries in Europe which might benefit from such arrangements especially where the means were limited causing difficulties in sending research workers to other countries.

The Sub-Commission discussed the role of the liaison officers and decided that more use should be made of them. It was suggested that when a question of exchange of a research worker arises which cannot be solved by direct contact with research people the liaison officer should be consulted. In this connection it was also suggested that more use should be made of other machinery already in existence.

The Sub-Commission concluded:

1. that it would be fruitful to collect information from members of the Sub-Commission regarding the rules and regulations which are in effect having a bearing on the exchange of research workers. This information should be submitted to FAO for compilation and distribution to the liaison officers. The information is to be submitted in one of the official languages of FAO.
2. that it would be difficult and unsatisfactory for the countries to attempt to collect information on all the possibilities available for research workers in each country. It would be a responsibility of the liaison officer to have available such information in order to answer requests from other countries relative to the possibilities which exist for accomodation of foreign research workers.
3. that it should be a general principle for the country which sends out a research worker to pay for all of his expenses, if not contrary to existing agreements. Where this is not possible aid might be obtained from other sources to be explored by FAO.
4. that FAO should consult with the United Nations and UNESCO regarding the possibilities of obtaining aid for the exchange of European agricultural research workers. The report of the results of these discussions should be communicated as soon as possible to the Chairman, who is authorized by the Sub-Commission to agree on their implementation before the next meeting of the Sub-Commission.
5. that more use should be made of the machinery which already exists including the liaison officers appointed by member countries.
6. that the Sub-Commission reaffirms its recommendation made at the meeting in The Hague which stated that:

"Each country should be responsible for expenditure in relation to its own research workers, except in cases where one country requested aid from another. However, the Sub-Commission agreed that bilateral agreements, as, for instance, the agreement between the United Kingdom and France, will in many instances facilitate exchange. The Sub-Commission recommended the establishment of such agreements between other countries and suggested that the attention of governments be drawn to this method of exchanging workers".

Register of Cultivated Varieties

During the discussion on this subject the delegate from Spain stated that he was pleased that FAO was now taking an interest in this question. He expressed satisfaction that the matter has been carefully considered. Doubt was expressed, however, that it would prove feasible or necessary to collect information concerning legislation in this field. The Sub-Commission concluded

that the work of FAO should be restricted to continuing to maintain contact with the International Committee on the Registration of Plant Varieties and to encouraging member countries to send to FAO lists of varieties as proposed at the Third Meeting of the Sub-Commission on Agricultural Research in Paris. The Sub-Commission was pleased with the activity of FAO in this field and requested that work be continued in order to ensure that adequate attention will continue to be given to agricultural crops.

Coordination of Research in the Field of Farm Buildings

Consideration was given by the Sub-Commission to the coordination of research in the field of farm buildings, which was referred to the Sub-Commission by the Tenth Session of ECA. Note was taken of the recommendation made by the OECC/EPA Seminars held in Denmark and Italy. These two seminars recommended the establishment of an international documentation center for the exchange of information on farm buildings and allied subjects, including research and advisory material. The Sub-Commission took note of the offer made by the CIGR * to the ECA that the section of CIGR dealing with farm buildings would cooperate in international research activities in this field.

The Sub-Commission expressed satisfaction that the suggested terms of reference of the proposed international documentation center included an exchange of information on research dealing with farm buildings and allied subjects. While the Sub-Commission is of the opinion that this arrangement appears to be adequate for the exchange of research data in this field, it expressed a strong interest in the problem of coordination of farm building research and welcomed the offer made by the CIGR. Detailed consideration of this problem was postponed pending the outcome of consultations with directors of national research institutes and the progress made by the CIGR.

Participation of Countries in Other International Research Groups

The importance of member countries being informed on the activities of other international research groups in order to facilitate research coordination, was a recurrent theme during discussions held throughout the session. The Sub-Commission felt that the information included in the Report of the Fourth Meeting of International Organizations for the Joint Study of Programs and Activities in the field of Agriculture in Europe, was extremely valuable for this purpose. It was suggested that the Liaison Center should utilize the material now being assembled by members of the Sub-Commission concerning international research groups with which research workers are collaborating. This material would be helpful if brought to the attention of international organizations when they are asked for additional information by the Liaison Center.

The Sub-Commission noted that, in response to the inquiry circulated by the FAO Secretariat to member countries concerning participation of their research workers in other international research groups, replies had been received from the following countries:

* CIGR - Commission internationale de genie rural.

Belgium
Denmark
German Federal Republic
Ireland

Finland
Netherlands
Norway
Spain

Switzerland
Turkey
Yugoslavia

The Sub-Commission recommended that the remainder of the countries should provide the FAO Secretariat with replies of the inquiry already circulated, so that a detailed report can be prepared summarizing data on the extent of cooperation in agricultural research among all other organizations. In preparing this report, information concerning the activities of the international non-governmental organizations in agricultural research should be incorporated.

Use of Electronic Computers in Agricultural Research

The Sub-Commission had before it the paper describing the arrangements now in force for using the electronic computer at Rothamsted Experiment Station in the United Kingdom for the analysis of results of agricultural experiments. The costs of this trial will be borne equally by the United Kingdom and FAO.

The procedure which has been agreed to by the Agricultural Research Council and Rothamsted is as follows:

1. Experimental data of the kind described in the report of the 3rd session of the Sub-Commission on Agricultural Research will be accepted for analysis on the electronic computer at Rothamsted.
2. Before any data is sent to Rothamsted a letter of enquiry should be sent to Dr. Frank Yates, Chief of Statistics Department, Rothamsted Experimental Station, Harpenden, Herts, describing the experiment, its design and the kind of data for which analysis is required. This letter should state also that this enquiry is being made in accordance with FAO Document ECA/R/58/1. Copies of all correspondence should be sent to Dr. D.C. Kimmel, Chief, Agricultural Institutions and Services Branch, FAO, Rome, where a record will be kept for the Sub-Commission on Agricultural Research.
3. Dr. Yates will inform the research station making the request regarding the availability of time on the electronic computer and will state when the material should be sent to Rothamsted. No material should under any circumstances be sent directly to Rothamsted before authorization by Dr. Yates.
4. Upon completion of the analysis the material and the analysis will be returned to the originator.
5. Rothamsted will acknowledge receipt of the material and will proceed with the analysis as rapidly as possible.
6. Material can be accepted at Rothamsted in English or French.

The Sub-Commission was pleased to hear from several other delegations - notably France, The Netherlands and Norway - that they had now available electronic computation equipment which would be useful in agricultural research.

In the discussion which followed it was stressed that Dr. Frank Yates at Rothamsted not only had the computer available but had also done a great deal of work in setting up programs for the analysis of agricultural experiments. It was pointed out that countries using these facilities would benefit from several years of intensive work by Dr. Yates.

The Sub-Commission regretted that thus far little use has been made of the arrangements*. A delegation from The Netherlands has visited Rothamsted to enquire into the possibilities for use of the computer in the future.

The Sub-Commission concluded its discussion by expressing its appreciation for the work done by Dr. Frank Yates and thanked the United Kingdom and FAO for working out these arrangements.

Efficiency in Publication of Results of Agricultural Research

Note was taken by the Sub-Commission of the valuable comments provided on this subject by the International Association of Agrarian Librarians and Documentalists (I.A.A.L.D.) and the Commonwealth Agricultural Bureaux, and appreciation was expressed for the cooperative spirit shown by these bodies.

The difficulties involved in dealing with this problem and their complicated nature were discussed, and attention was drawn to the role member governments can play in avoiding excessive overlapping and duplication so far as the research publications which they finance are concerned.

Consideration was given to the guidelines included in the paper under discussion. The Sub-Commission requested FAO to revise these guidelines on the basis of the comments received from C.A.B. and the I.A.A.L.D., and to circulate this revision to member countries prior to the holding of the next session of the Sub-Commission, at which time further discussion would take place on this problem. It was suggested that use should be made of studies carried out by the Library of the U.S. Department of Agriculture and the Rockefeller Foundation concerning the publication of results of research, when preparing a more definite paper on this subject.

The Sub-Commission reaffirmed the recommendation made at its last session that member countries should provide the Commonwealth Agricultural Bureaux with a list of their journals which publish results of agricultural research.

* Since the meeting, as of October 20, 1958, several inquiries have been received by Dr. Yates.

FUTURE PROGRAM OF WORK

The Sub-Commission devoted a full morning to discussing the organization and working methods of the subsidiary bodies of the European Commission on Agriculture and the appraisal of possibilities for more effective cooperation in agricultural research in Europe.

The Sub-Commission stressed the importance of making the best use of resources available and gaining maximum benefits from minimum costs through improved coordination of research. In this regard attention was drawn to the need to organize specialized European research institutes supported by interested countries to avoid the necessity of countries having to create or expand similar institutes. Further it was suggested that, in order to encourage cooperation, advantage be taken of outstanding research institutes already in existence by organizing contacts with institutes in other countries working in the same field.

Attention was also drawn to the fact that, in general, any cooperative research project proposed by the Sub-Commission is probably receiving some attention by another group. In order to avoid overlapping, contact should be established with all types of research bodies and institutes. The suggestion was made that the Sub-Commission should take every opportunity to work in collaboration with other research groups, which in some cases may accept a large degree of responsibility for the coordination of research in specialized fields.

It was pointed out that difficulties are involved in coordinating research being carried out by the various bodies established prior to the creation of FAO. Many of these bodies, and others of more recent origin are financed directly or indirectly by governments and member countries should take steps to insure that the work of such bodies is in harmony with the efforts being made by the Sub-Commission to avoid overlapping through improved coordination of research. Member countries should therefore insure that they are kept fully informed on research being carried out by these independent groups.

Reference was made to the need for taking a comprehensive approach towards research, involving economic and social aspects as well as those of a purely technical nature. It was explained that the intent of the ECA in including this view in the new terms of reference of the Sub-Commission, was not that economic and social studies should be taken up in the program of work but that attention should be paid to these aspects rather than technical problems being studied in isolation. The Sub-Commission concurred with this view.

Stress was placed by the Sub-Commission on the fundamental importance of strengthening research coordination at the national level. The Sub-Commission suggested that FAO consultants could be profitably employed to study and advise on national systems of research organization in a similar way to the approach taken by OEEC concerning extension services and studies on fertilizer use. Several delegates pointed out that studies concerning research organization have been in progress on a national basis in their countries for a number of years.

In conclusion, the Sub-Commission agreed that the cooperative research projects and other activities at present being carried out should be continued. Note was taken of the various points raised in the ECA document on organization and working methods of the subsidiary bodies of the European Commission on Agriculture, and it was agreed that the various techniques would be kept in mind.

The Sub-Commission agreed that its future program of work should be based upon the following:

1. Coordination of National Research Activities

The existence of effective coordination at the national level is a prerequisite to successful international cooperation, and should continue to receive the attention of member countries.

Agricultural Research Councils or similar central bodies for the coordination of national research activities already exist in a number of the member countries, and it is strongly recommended that those countries which have not adopted this system should give serious consideration to establishing their own national research councils or committees.

It is extremely useful for member governments to know how research is organized in the various countries of the Sub-Commission, and countries should ensure that the information already provided to the FAO Secretariat is kept up to date. The Sub-Commission invites FAO to make available to the member countries the services of one or two high level consultants to study their national research organization. The experience gained by such consultants in studying the various systems used in European countries would be of great value for advising interested countries on possible measures for improving their research organization.

2. International coordination of research activities

In order to facilitate the work of the Sub-Commission, it is recommended that each delegate attending the sessions should be fully conversant with the major agricultural research problems of his country. To this end meetings should be arranged at the national level with senior research directors so that each delegate can speak with authority on his country's needs and opinions. During these national meetings of research directors the activities of international scientific bodies, including professional associations, must also be taken into account in order that research projects already taken up at the international level are not proposed again at meetings of the Sub-Commission. This is a further step which can be taken to avoid overlapping and duplication.

National meetings should be held before the next session of the Sub-Commission so that delegates will be in a position to present their Governments' views regarding projects they wish to be taken up by the Sub-Commission at the international level. Included would be projects of a cooperative nature to be developed among countries with similar problems, and the priorities they should receive. In addition to meetings with research directors prior to its sessions, the Sub-Commission stressed that it is equally important for research directors to be informed of the results of the Sub-Commission's deliberations!

Looking back over four years of work the Sub-Commission recognized there were many problems yet to be solved in promoting international coordination of agricultural research. It reaffirmed an earlier recommendation that complete national lists of research projects, institutions and workers, as well as information regarding other international research groups should be assembled and published. In this way member countries will know what is taking place and individual research workers may use their personal influence to improve coordination over and above opportunities which appear for coordination between research institutes at the international level.

3. Future development of specialized European agricultural research institutions

While it is not anticipated that many specialized research institutes of an international character are likely to be established on a European basis in the near future, it is felt that, in harmony with the growing community spirit in Europe, this concept should receive consideration at the national level. As an intermediate step, groups of countries with similar conditions could consider the selection of one institute among those already working in the same field to serve as headquarters for joint studies of selected problems. The institute selected as headquarters would then be better staffed and equipped through group support and financing, and duplication in the establishment of costly national centres avoided. It was further recommended that establishment of international joint research institutes by groups of interested countries be studied. The need for this type of cooperation could also be profitably discussed at the national meetings of research directors, which may eventually lead to meetings of research directors concerned with specific fields at the international level.

SUMMARY OF RECOMMENDATIONS AND CONCLUSIONS

Contact Group on the Uses of Radioactive Isotopes and Radiation in Agricultural Research

The Sub-Commission reaffirmed its position that problems of research on specialized subjects in atomic energy touching on agriculture be referred to the Contact Group, this being the purpose for which the Sub-Commission had established the Contact Group. The Sub-Commission agreed work was progressing satisfactorily.

Cooperative Research Project on Trace Elements

The Sub-Commission expressed pleasure at progress achieved and thanked Professor Wallace for his work. It asked that a meeting of the members of the research project be held in late 1958 or early 1959 and that Professor Wallace be asked to continue as coordinator at least until after the meeting has been held. The Sub-Commission also urged that the summary of replies to the questionnaire be circulated to members of the research project without delay.

Cooperative Research Project on Supplemental Irrigation

The Sub-Commission agreed it was too early to measure effectiveness of this work although it was pleased to note that the northern group had already obtained interesting results.

Index of Agricultural Research Institutions

The Sub-Commission commended FAO's work in preparing the Index and agreed it serves a very useful purpose in member countries. The Sub-Commission asked FAO to study the possibilities of reissuing the Index in a looseleaf form to facilitate revision and to place a definite proposal before the Sub-Commission at its next session.

List of Agricultural Research Indices

The Sub-Commission concluded that the best procedure would be for the FAO Secretariat to develop a workable system of numbering research projects using the Universal Decimal System and present a definite proposal to the Sub-Commission for consideration.

Interchange of Research Workers

The Sub-Commission agreed on the following points:

- that it would be fruitful to collect information from members of the Sub-Commission regarding the rules and regulations which are in effect having a bearing on the exchange of research workers.
- that it should be a general principle for the country which sends out a research worker to pay for all of his expenses, if not contrary to existing agreements.

- that the Director-General of FAO be asked to consult with the United Nations and UNESCO regarding the possibilities of obtaining aid for the interchange of European agricultural research workers.
- that more use should be made of the machinery which already exists.
- that its recommendations made at the Second Meeting in The Hague "that bilateral agreements between countries be worked out and that the attention of governments be drawn to this means of stimulating interchange of research workers" be reaffirmed.

Registers of Cultivated Varieties

The Sub-Commission expressed its appreciation of the work of FAO in this field and requested that it be continued in order to insure that adequate attention is given to agricultural crops.

Participation of Countries in Other International Research Groups

The Sub-Commission recommended all countries should submit replies to the questionnaire circulated by FAO and that a detailed report be prepared summarising data on the extent of cooperation in agricultural research among all other organizations.

Efficiency in Publication of Results of Agricultural Research

The Sub-Commission requested the preparation of a revised paper on this subject based upon comments received thus far as well as upon studies carried out by the library of the U.S.D.A. and the Rockefeller Foundation.

The Sub-Commission reaffirmed the recommendation made at its last session that each member country should provide the Commonwealth Agricultural Bureaux with a list of their journals which publish results of agricultural research.

Future Program of Work

The Sub-Commission agreed that its future program of work should be based on the following:

- coordination of national research activities

to facilitate national coordination it recommended again that countries which have not adopted the system of setting up a central body such as an Agricultural Research Council should seriously consider doing so. It also asked FAO to make available the services of one or two high level consultants to study the research organization of member countries.

- international coordination of research activities

the Sub-Commission recommended that delegates to its sessions be fully conversant with their agricultural research problems and to insure this, meetings of research directors should be held in each country before the next session of the Sub-Commission. These national meetings should result in the formulation of a list of cooperative projects which countries wish to be taken up at the international level in the Sub-Commission. The Sub-Commission also reaffirmed its earlier recommendation that complete national lists of research projects, institutions and workers should be assembled and published.

- development of specialized European agricultural research institutions

the Sub-Commission recommended this concept should receive consideration and to begin with groups of countries might select one institute to serve as headquarters for joint studies. The Sub-Commission further recommended that establishment of international joint research institutes be studied.

TIME AND PLACE OF NEXT SESSION

The Sub-Commission accepted the kind offer of the delegate from Italy, Professor de Cillis, who invited the Sub-Commission to hold its next session in Rome, Italy. With regard to the time of the next session, the Sub-Commission expressed some concern regarding the necessity for it being held prior to the next meeting of the European Commission on Agriculture, but no agreement was reached on this point. It was agreed that the Chairman, in consultation with the Director-General of FAO, should determine when the next session is to be held.

